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SATURDAY, AUGUST 21, 1880.

ETHNOLOGY.*

FRAGMENTARY NOTES ON THE ESKIMO OF CUMBERLAND SOUND.

BY LUDWIG KUMLIEN.

The record of the voyage of the *Florence*, the vessel which conveyed the Howgate preliminary Polar expedition, has been printed by the Smithsonian Institution by request of Professor Spencer F. Baird, and forms the fifteenth of a series of papers intended to illustrate the collection of natural history and ethnology belonging to the United States, constituting the National Museum, placed in charge of the Smithsonian Institution by an act of Congress.

The report on "Ethnology" by Ludwig Kumlien is of great interest, and on this occasion we confine our attention to this part of the work, reserving other branches for future notice.

He states that the Cumberland Straits, Sound, Gulf or Inlet, extends from about lat. 65° N. to lat. 67° + N. It is the Cumberland Straits of Baffin, its original discoverer at the end of the sixteenth century; the Hogarth Sound of Captain Penny, who re-discovered it in 1839; and the Northumberland Inlet of Captain Wareham in 1841.

During the last quarter century it has often been visited by Scotch and American whalers, ships frequently wintering on the southwestern shores.

It is at present unknown whether it be a sound or gulf; it is generally considered to be a gulf, but some Eskimo say that the Kingwah Fjord, one of the arms extending to the NE., opens into a large expanse of water, to them unknown. Icebergs are also sometimes found in this fjord which from their positions, seem to have come from the northward, and not from the south.

The eastern shore of this sound forms the western boundary of that portion of Cumberland Island which lies between its waters and Davis Straits, and known as the Penny Peninsula.

In about lat. 66° N. the Kingnite Fjord extends from the sound in a ENE. direction, and nearly joins Exeter Sound from Davis Straits; they are separated only by a portage of a few miles. The Cumberland Eskimo make frequent excursions to the eastern shore *via* these fjords, but seem to have extended their migrations but a short distance northward, finding Cumberland Sound more to their tastes.

The width of Cumberland Sound opposite Niantilic is about thirty miles, possibly its widest part. It is indented by numerous and large fjords, few, if any, of them having been explored; many islands are scattered along both shores, and in some instances form quite considerable groups.

The present Eskimo are few in numbers. We would estimate the entire population, men, women,

and children, on both sides of the sound, from Cape Mercy on the east to Nugumeute on the west, not to exceed four hundred individuals. It is certain that within the last thirty years the mortality has been very great among them; even the whalers remark an astonishing diminution in their numbers at the present day, as compared with twenty years ago.

Numerous traditions exist among them of the time when they warred with other tribes, and old men, now living, have pointed out to us islands that were once the scene of battles, where the besieged party was starved into submission by their enemies. According to the usual story, the hurling of stones was one of the most effective and common modes of warfare; this was especially the case when one party could get upon a ledge above the other. At the present day they are peaceful and quiet, have no recognized leader, and no desire to fight, even if their numbers would permit of it.

As the story goes, the present population were the victors in those fights, and took possession of the country they now inhabit. Some say they came from the northwest, and found another tribe, which they overcame and drove away. Their stories on this subject vary, and sometimes with this unusually interesting tradition, as well as many others, they get events of a very recent date hopelessly mixed up with the rest; and it is no unusual instance to find that some whaler, with a good imagination, has supplied and restored lost portions of the narrative, to their entire satisfaction; but these restorations are chiefly remarkable for their utter disregard of truth or possibility.

The following tradition is a translation from one of the most reliable natives we became acquainted with:

"A long time ago (*tichemaniadlo*) other Innuits (Eskimo) were found here; they were called 'Tunak'; they were very strong, very large, and had short legs and large arms; they had very wide chests. Their clothes were made of bear skins, and their knives from walrus tusks. They did not use bows and arrows, but only the harpoon-lance; they harpooned the reindeer in the water, from their kyacks, which were very large. The *Tunuks* made houses out of stone. They were able to lift large stones. We were afraid of them; we fought with them and killed them. They (the *Tunuks*) came in the first place from *Greenland*. The women made clothes from their own hair. They had no dogs at that time, but they made sledges and harnesses, and finally (*witchou* = by and by) put the harnesses on three rocks, one white, one red, and one black; they then called, and when they looked they found the stones had been transformed into dogs. After a time they got plenty of dogs; then they went about more. The present Eskimo could not understand their language. They lived to a great age (*E. tukerwouk nami* = did not die!). Far to the west some Eskimo lately saw some *Tunuks*; they had bear-skin clothing. In the *Tunuks* land (where?) the *musk ox* (*omung muk*), bear, and seals are abundant. They build walls of stones on the land, and drive the reindeer into ponds, and catch them in kyacks. They have a large, long *callytong* (coat, or jumper jacket) that they fasten down around them on the ice while they are watching a seal's hole; underneath this garment, on the ice, they place a lamp; over this lamp they cook meat. Their eyes

* Bulletin (15) of the U. S. National Museum. Contributed to the Natural History of Arctic America made in connection with the Howgate Polar expedition 1877-78. Washington: Government Printing Office. 1879.

are sore all the time. We are afraid of them; do not like them; glad they have gone away."

This tradition differs somewhat in the particulars when told by different individuals, but the main points are essentially the same. Many will not tell it all; some, only parts of it. The ridiculous story about the dogs is firmly believed by the present Eskimo as the origin of these animals.

That the *Tunuk* have been seen of late years in the west is not improbable—that is, natives, different in dress and stature; but they were most likely the tribe known as the Pelly Bay Eskimo from the north shores of Hudson's Straits and from Fox Channel, they being larger and more robust than the Cumberland Eskimo of the present day. It is certain that since the whalers have begun coming among the Cumberland Eskimo, and introduced venereal diseases, they have deteriorated very much. They now almost depend upon ships coming, and as a consequence are becoming less expert hunters, and more careless in the construction of their habitations, which are merely rude temporary shelters made at a few minutes' notice. Great suffering often ensues from living in these miserable huts. The seal skin that should have gone to repair the tent is bartered to the whalers for a little tobacco, or some valueless trinket, which is soon thrown aside. The men are employed to catch whales, when they should be hunting in order to supply the wants of their families; and the women, half clad, but sporting a gaudy calico gown, instead of their comfortable skin clothes, and dying of a quick consumption in consequence, when they should be repairing garments or preparing skins, are loafing around the ships, doing nothing for themselves or any one else.

The Cumberland Eskimo of to day, with his breech-loading rifle, steel knives, cotton jacket, and all the various trinkets he succeeds in procuring from the ships, is worse clad, lives poorer, and gets less to eat than did his forefathers, who had never seen or heard of a white man.

There is a practice among them that is probably of long standing, and is regularly carried out every season, of going into the interior or up some of the large fjords after reindeer. They generally go during the months of July and August, returning in September, to be on hand when the fall whaling begins. The purpose of this reindeer hunt is to procure skins for their winter clothing. Nearly all return to the sound to winter. They have regular settlements, which are hardly ever entirely deserted at any season. The principal ones are known as Nugumeute, Niantilie, Newboyant, Kemesuit, Annanactook, Oosooadluin, Ejujuajuin, Kikkerton. and Middlejuacktuack Islands, and Shaumeer, situate at different points on both sides of Cumberland Sound. During the winter they congregate at these points in little villages of snow-huts.

The present principal headquarters are at the Kikkerton Islands, or at Niantilie, according to which point the whalers winter. The old harbor of Kemasuit, once the winter harbor of whalers and a favorite resort of the Eskimo, is now deserted, except by a few superannuated couples, who manage to catch enough seal to live on.

As a rule, the present race is of short stature, the men from five feet three inches to five feet six. There are some exceptions, but they are in favor of a less rather than a greater height. The women are a little shorter. The lower extremities are rather short in proportion to the body, and bow-legs are almost the rule. This probably arises from the manner in which the children are carried in the mother's hood, as well as the early age at which they attempt to walk. The habit of sitting cross-legs may also have a tendency to produce this deformity. Their hands and feet are small and well formed. Their hands are almost covered with the scars of cuts and bruises. It seems that in healing the injured part rises, and is always afterwards disgustingly prominent. There is a great variation in the color of their skin, and a description that would answer for one might not apply at all to another. Even among those that are of pure breed there are some whose skins are no darker than a white man's would be if subjected to the rigors of wind and cold, and the never-removed accumulation of soot and grease. Others again seem to have been "born so." The children, when young, are quite fair. The eyes are small, oblique, and black or very dark brown. The hair is black, straight, coarse, and very abundant. It is rarely wavy or curly among the full-blooded Innuites.

There are, of course, exceptions to the above in case of half-breeds. Their faces are broad and flat, with rather large lips and prominent cheek-bones.

Infanticide is not practiced among the Cumberland Eskimo at the present day. I have learned from some of the most intelligent that this barbarous custom was in vogue in former times, however. Among the natives of Repulse Bay, and those living on the north shores of Hudson's Straits, it is practiced to a considerable extent, especially with the tribe known as the Pelly Bay natives. The practice is confined almost entirely to female children, the reason being, they tell us, that they are unable to hunt, and consequently of little account. It seems to have been referable to the same cause among the Cumberland Eskimo. Their intercourse with the whites seems to have modified some of the most barbarous of their primitive habits.

Twins are not common, and triplets very rare. The males outnumber the females. Infanticide may, to some extent, be the cause; but lung diseases, which are alarmingly prevalent, seem more fatal to the women than to the men.

Children are often mated by the parents while they are still mere infants. There is such an extreme laxity of morals that the young women almost invariably become wives only a short time before they are mothers.

It is impossible to say at what age the women cease to bear children, as they have no idea of their own age, and few are able to count above ten. Puberty takes place at an early age, possibly at fourteen with the female. They are not a prolific race, and it is seldom a woman has more than two or three children, and often only one, of her own; still many, or almost all, have children; but inquiry will generally divulge the fact that some of the children have been bought. Almost every young woman has or has had a child, but the identity of the father is in no wise necessary in

order to insure the respectability of the mother or child. Such children are generally traded or given away to some elderly couple as soon as they are old enough to leave the mother. The foster-parents take quite as good care of such adopted children as if they were their own.

So far as we could learn, they do not generally practice any rites or ceremonies of marriage. The best hunter, or the owner of the largest number of dogs and hunting-gear, will seldom have any difficulty in procuring the woman of his choice for a wife, even though she has a husband at the time. It is a common practice to trade wives for short periods or even permanently. They appear to have marriage rites sometimes, but we could induce no one to tell us, except one squaw, who agreed to, but only on condition that we became one of the interested parties and she the other. This was more than we had bargained for, and, although generally willing to be a martyr for the cause of science, we allowed this opportunity to pass without improving it.

Monogamy is at the present time the most prevalent. Polygamy is practiced only in the case of a man being able to provide for two or more wives. Three, and even four wives rarely belong to one man. Neither two nor three wives in one hut make an altogether harmonious household; but all little difficulties are generally settled by the husband, in a manner better calculated to insure reverence to masculine strength than respect for superior intelligence.

The scarcity of women at present in proportion to the men makes polygamy a luxury only to be indulged in by the wealthy. Divorce, if it can be called by that name, is very frequent among them. All that is needed is that the husband tires of his wife, or knows of a better one that he is able to procure. Neither does it seem to trouble the woman much; she is quite sure to have another offer before long; and a change of this kind seems to benefit both parties. One rather remarkable and very laudable practice among these people is the adoption of young children whose parents are dead, or, as often happens, whose mother is the only recognized parent. Orphans, so to speak, are thus twice as common as among civilized nations. These children, whether bought or received as a gift, are always taken as good care of as if they were their own, especially if they are boys.

Among the Eskimo employed by the Florence was a family that had two children, who passed for brother and sister. One, the boy, was a nephew of "Eskimo Joe," of Polaris fame. He had been brought from the Hudson's Straits Eskimo, some two hundred miles to the south. He was a perfect little satan; and, though he gave us much annoyance, he was a never-failing source of amusement to us all. The girl, again, was a native of Exeter Sound, on the west coast of Davis Straits; still, both were considered as their own children, and well cared for.

Half-breeds are said to be of more irritable temperaments, and less able to bear exposure and fatigue, than the full-blooded Eskimo.

The food of the Cumberland Eskimo consists entirely of flesh, and in most sections of the sound, *Pagomys fœtidus*. In fact, this animal is their principal dependence for food, fuel, clothing, and light. The Eskimo will eat a few of the berries of *Vaccinium*

uliginosum and *Empetrum nigrum*, the roots of *Pedicularis*, and occasionally a little *Fucus vesiculosus* in winter, but this constitutes a very small and unimportant part of their food.

As soon as the ice has fairly left the sound, the Eskimo hunter leaves the winter encampment, with his family and such portions of his household goods as will be needed, and takes a tour inland or up some of the large fjords after reindeer. The larger part of his possessions, including sledge, dogs, harnesses, winter clothing, etc., he secretes among the rocks in some unfrequented spot. His dogs are put on some little rocky islet, to shift for themselves. They eke out a scanty subsistence by making good use of their time at low tide, *Cottus scorpius* constituting the greater part of their food at this season.

There are at present so many whaleboats owned by these Eskimo, that they experience little difficulty in making quite extensive cruises, three or four families constituting a boat's crew. They will load a whaleboat to within an inch or two of the gunwale, and then set out for a few weeks of enjoyment and abundance. The squaws do the rowing and the "captain" stands majestically in the stern with the steering oar, while the rest of the men are either asleep or on the lookout for game. The cargo consists of their tent-poles, the skin-tents, pots, and lamps, with sundry skin-bags containing the women's sewing and skinning utensils. Their hunting-gear, of course, forms a quite conspicuous portion of the contents of the boat. Very few there are at present who have not become the possessors of a half-barrel, and this vessel occupies a conspicuous place in the boat, and is almost constantly receiving additions of animal matter in some shape; a few young eiders or gulls will soon be covered up with the intestines of a seal and its flesh. From this receptacle all obtain a piece of meat whenever they feel hungry. This vessel is never emptied of its contents, except by accident or when scarcity of material forbids its repletion; and, as the temperature at this season is well up in the "sixties" during the day, this garbage heap becomes so offensive as to be unbearable to any one but an Eskimo.

They proceed at a very leisurely rate, rowing for a few minutes and then stopping for a time, chatting, smoking, or eating. When they feel tired they haul up on the rocks and have a sleep, and then resume the journey in the same vagabond manner. If, while thus cruising, any live creature that they think there is any possibility they can capture comes in sight, all hands become animated, the oars are plied with redoubled energy, guns and spears are in readiness, and every one is eager for the sport. Hours are often consumed in chasing a half-grown duck or a young loon which when procured is but a bite; but the fun of the chase seems to be the principal object, and they enjoy it hugely. Thus they journey till they reach some suitable locality, when the boat is unloaded, the toopiks raised, the lamps put in their places, and all is ready for a grand hunt. The men divide and scatter over the mountains, leaving the camp in charge of the women and children; these busy themselves by hunting for and destroying every living creature that they can find.

On the return of the hunters, who perchance have brought some skins and a hunk of venison, there are

joyous times in camp; the meat is disposed of first and then the younger people engage in various games while the older ones gather around some aged crone, who excitedly recounts the hunts of her girlhood days, plentifully intermixing stray portions of the old sagas and legends with which her memory is replete. Thus they live from day to day, the men hunting and the women stretching the skins, till the season comes around when they must return to the coast. Happy, contented, vagabond race! no thought of the morrow disturbs the tranquility of their minds.

When a deer is killed any distance from camp, the meat is cached, with the intention of returning after it in winter; but with what the wolves and foxes devour and what the Eskimo never can find again, very little is brought back.

Many have now firearms of some pattern or other; and though they will hunt for a ball that has missed its mark for half a day, they do not hesitate to fire at any useless creature that comes in their way. Those that have no guns use bows and arrows made from reindeer antlers. Sometimes the deer are driven into ponds, and even into the salt water, and captured in kyacks with harpoons.

(Continued.)

COAL.

BY P. W. SHEAFER, M. E., POTTSVILLE, PA.

I.

Coal is monarch of the modern industrial world, with its wonderfully diversified interests, and their ever expanding development. But supreme as is this more than kingly power at the present time, comparatively brief as has been the period of its supremacy, and unlimited, in the popular apprehension, as are its apparent resources, yet already can we calculate its approximate duration and predict the end of its all-powerful but beneficent reign. This is especially the case with our limited Anthracite; the more widely diffused bituminous having in reserve a much longer term of service—short indeed as a segment of the world's history, but so long, compared with an average human life, as to be of slight practical concern to the present generation.

The territory occupied by the anthracite coal fields of Pennsylvania is but a diminutive spot compared with the area of bituminous coal in Pennsylvania alone, to say nothing of its vast extent in other portions of the United States, and in Great Britain, France and Belgium. The area of the anthracite of the United States is but 470 square miles, not one-twentieth the size of Lake Erie, while the wide-spread bituminous coal fields cover twice the area of our four great lakes: the anthracite making but an insignificant showing on the map of the continent. But the comparison with the bituminous area is deceptive, unless the relative thickness of the two is taken into

consideration. If the anthracite beds were spread out as thinly as those of the bituminous region they would cover eight times their present area, or 3,780 square miles. And, again, if the denuded spaces within the borders of the anthracite coal fields were covered with a deposit of coal as thick as we may justly suppose they once were, and as the remaining still are, the available area would be increased to about 2,000 square miles, or 1,280,000 acres; equal to a coal deposit of 92,840,960,000 tons.

Contemplating the number and extent of the coal beds, a total thickness of 107 feet, distributed in fifteen workable beds, interstratified with a full mile in thickness of rock and shale, we are lost in wonder at the luxuriant growth of tropical plants required to produce this vast amount of compressed fuel, and the mighty processes of nature by which it was placed in its present position. The ingenuity of scientists is taxed to account for this wonderful accumulation of fuel, once vegetable, now mineral; once waving in fresh green beauty on the surface of the earth, now buried under hundreds of feet of solid rock; once growing in a level deposit of mud so plastic that the lightest leaflet dropping on its surface, left its impress; now the mud hardened into slate, and the rank vegetation changed to hard and glittering coal, rising and falling in geologic hills and valleys, surpassing in number, depth, extent, sharpness of flexure and acuteness of angle, anything visible in the light of upper day.

Some slight idea of the growth of these ancient forests may be gained from the computation that to form only one of these large beds of coal required a deposit of vegetable matter perhaps one hundred feet in thickness. What shall we say then to the amount of vegetation stored away in the mammoth bed which extends through all three of the anthracite coal fields, covering an area of 300 square miles, with an average thickness of twenty feet, and containing, it is estimated, 6,000,000,000 tons of coal.

Not less wonderful and interesting than the coal deposits is the grand floor of conglomerate which underlies them; a vast sheet of rock, infinitely old, composed of fragments of other rocks infinitely older, bound together by an almost imperceptible cement which holds them so firmly that gunpowder will scarcely separate them. Whence came this great sea of pebbles, water rounded and water-borne to their present resting place? We find them now as the current has dropped them—masses of silex as large as ten-pound cannon balls, and almost as round, so shapely have they been worn by the action of some ancient current. These were deposited first, and then, in regular order, trending to the southwest, came sizes graduated down to those of a pea and grains of sand.

This more than marble floor bears few saurian foot prints; scarcely an impress of bird or beast or fish, or sign of animal life. Nothing but a bed of almost pure silica; a solid foundation on which to build up the mass of rock and the fossil fuel that we call anthracite, older than the hills and predestined for the use of coming man.

The pebble-laden flood ceased, and was followed by placid waters and gentle currents, bringing fine mud and silt to cover the rocky bed. Then the waters drained away, or the land rose, until fit for vegetable life, it was covered with the mighty flora of the car-